

STEP 6

At the end of the nylon shock cord use quick link through the sewn loop attaching to the RNWS weight cartridge. 2' or so from the end attach parachute shroud lines by looping over shock cord and passing back through shroud lines making a knot. Some use a quick link or swivel, this is your choice, knot ours!

STEP 7

Assemble RNWS with provided instructions. You should wait until your rocket is finished, weighed, adjust the Rocksim file and simulate. THEN you know how heavy to build the weight cartridge(s). Additional cartridges can be purchased on our website in the Components section.

STEP 8

Install the rail guides into the booster with provided screws. Try to aim for the aft and forward rings centered between the fins. Drill a hole smaller than the screw so the screw threads into it. Drop a small amount of epoxy in drilled hole, thread the rail guide and screw in the hole, rotate rocket 180 degrees & let cure. Repeat for the forward rail guide.

FINISH

Spray rocket with primer, sand and repeat until smooth finish is obtained. Spray rocket with paint of choice, let dry. Apply protective clear coat.



CP= 35.5" +/- .5"
Measured from tip of nose cone toward AFT.

Sim!

This rocket is recommended for high power rocket motors G through J impulse. Depending on your flying field and finished weight, this is a very versatile kit. The Rocksim file is available on the 4" PATRIOT product page on our website. Always check stability to ensure stable flight; the Center of Gravity (CG) must be forward of the Center of Pressure (CP) in flight ready condition.

Since Yank Aeronautics LLC dba LOC PRECISION cannot control the use of its products once sold, the buyer assumes all risks and liabilities there from, and accepts and uses LOC Precision products on these conditions.

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U S ARMY PATRIOT

FLYING MODEL ROCKET KIT



5,000'
↑
350'

G - J
Capable Impulse

DIAMETER 4.0"

HEIGHT 54"

WEIGHT 3lb

Featuring:

- 4" Pre-Slotted Airframe
- RNWS Nose Cone
- 36" Rip-Stop Nylon Parachute
- 15' Nylon Shock Cord
- 54mm LOC-N-Mount
- Motor Retention
- Fin Lock Rings
- Rail Guides
- Hardware



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YPAT4



LOC 4" PATRIOT

- 34" Slotted Booster, 7" Payload
- RNWS Nose Cone
- 1 Couplers
- 36" Parachute
- 15' Nylon Shock Cord
- 14" x 54mm Motor Tube
- 1/4" Fin Set
- 2 54mm LOC-N-Fin 1/4" Centering Rings
- 1x54mm FWD CR
- Z Clip Motor Retention
- 2-1000 Series Rail Guide
- Hardware — 2 T Nuts, 2 8x32x.375" Screws, 3/16" Quick Link, 2-.25x20 Eye Bolt



STEP 2

Rough sand the motor tube to ensure proper adhesion OR remove the outer glassine wrap. Slide the FWD ring onto the 54mm motor tube so the tube is 1/8" exposed from the ring. From the other end take the MID ring and slide up the motor tube. Slide the AFT ring on leaving 1/8" of the motor tube exposed (if using an aluminum motor retainer, you would need to adjust the length of the motor tube exposed). Insert the fins into the AFT and MID ring slots to obtain proper alignment.

STEP 3 Your choice! Lightly sand airframe/fill spirals if desired.

IF constructing by inserting the assembled motor tube assembly into the airframe THEN epoxying the fins in place...cool. Apply nominal bead of epoxy forward of the slots inside the airframe. Push the assembly forward until the MID and AFT ring slots are visible and aligned properly through the slot. Check your alignment by inserting the fins in the slots before it cures!! Set upright to cure. At this point you may drizzle epoxy from the forward end of the booster onto the forward ring to adhere the ring to the airframe; being careful not to get epoxy in the motor tube. Next turn the booster upside down so the AFT section is up. Apply a nice epoxy fillet to the aft ring where the ring meets the airframe. **DO NOT** get any epoxy in the T Nuts!!! Allow to cure. Reposition airframe laying down. Finally apply a generous bead of epoxy to the root edge of one fin and insert in the fin slot. Allow to cure before moving onto the next fin. When all fins are epoxied in place, apply an external fillet to each fin to airframe joint.

IF building the fin can outside the airframe to obtain **MAXIMUM** strength...let's do it! Insert a fin into the ring slot, slather epoxy to adhere the joints from the motor tube to the rings. Allow to cure and move onto the next. When all fins are secured, use a hobby knife to cut the slots, cut the width of the hobby knife, all the way to the aft of the airframe. Test fit the fin can separating/expanding the aft of the airframe to allow room for the fins to meet and nest in the slots. Sand the rings as needed. When satisfied with the fit, remove the fin can. **Refer to Step 4 for shock cord attachment.** Apply nominal bead of epoxy forward of the slots inside the airframe. Slide fin can up the airframe until the fins meet the forward end of the slots and nests properly. Leave upright to cure. Feel free to drizzle epoxy from the forward end of the booster onto the forward ring to adhere the ring to the airframe; being careful **NOT to get epoxy in the motor tube.** Next turn the booster upside down so the AFT section is up. Apply a nice epoxy fillet to the aft ring where the ring meets the airframe, squeezing the airframe to bring back together. **DO NOT** get any epoxy in the T Nuts!!! Allow to cure. Next epoxy fillet each fin joint externally to the airframe.

STEP 4

Pass loop through eye bolt, then pass shock cord through it's own loop as shown. This can be done prior to mounting motor tube assembly or fin can into airframe. Don't get any epoxy on the shock cord!



STEP 5

Install eye bolt in bulkhead. Tighten and epoxy nut. Insert into coupler so the bulkhead is recessed 1/8". Apply epoxy fillet to both sides where bulkhead meets coupler. Allow to cure. Mark a line on coupler at 3". Slather epoxy in the 7" airframe section 1" wide around the tube. Slide coupler in airframe to the 3" mark. Allow to cure. **Make sure the coupler does not interfere with cone shoulder!**

Due to the high thrust motors that can be flown in this rocket, epoxy is recommended!

Before beginning construction, read over instructions to become familiar with the proper construction steps. **TEST FIT ALL PARTS!** Light sanding may be necessary to obtain proper fit.



This kit may be constructed one of two ways. Inserting the built motor assembly, then epoxying the fins in the slots. OR building the fin can outside the airframe, cutting the airframe fin slots to the aft and sliding the fin can up into the airframe. Please decide which flavor you prefer before proceeding with construction.

STEP 1

Hammer or press the T Nuts in the AFT 54mm ring 1/4" lasered holes. T Nut flange should be on the **FWD** side of the ring. Epoxy fillet the aft outer diameter of the T Nuts to ensure they remain in place.

